FACT SHEET FOR NPDES PERMIT WA0038555
WASHINGTON CRAB PRODUCERS
CRAB PROCESSING AND SHELLFISH MEAL PLANT

9/12/2005

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System (NPDES) of permits, which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the state of Washington on the basis of Chapter 90.48 Revised Code of Washington (RCW) which defines the Department of Ecology's (Department) authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the state include procedures for issuing permits [Chapter 173-220 Washington Administrative Code (WAC)], water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least 30 days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

GENERAL INFORMATION	
Applicant	Washington Crab Producers
Facility Name and Address	Washington Crab Producers Crab Processing and Shellfish Meal Plant 1980 Nyhus Street North Westport, WA 98595
Type of Facility	Crab Processing and Shellfish Meal Production
SIC Code	0913 and 2092
Discharge Location	Waterbody name: Westport Boat Basin, Grays Harbor Latitude: 46° 54' 23" N Longitude: 124° 06' 25" W
Water Body ID Number	WA-10-22-03

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

This facility first received a permit in 1975. The first permit was renewed in 1990, in 1995, and again in 2000. Existing source performance standards apply to this discharge. As initially issued, the permit included bottom fish filleting. This operation was dropped in the 2000 permit. In this application for permit renewal, Washington Crab Producers has requested that they be allowed to process crabs at this location in addition to their crab processing operations under NPDES Permit No. WA0003352. The fishmeal operation takes shrimp and crab shells from Washington Crab Producer's other operation in Westport and from the proposed operation at this plant and dries them for sale. This a NPDES minor facility as classified by the EPA.

INDUSTRIAL PROCESS

Crabs are unloaded here and are proposed to be processed here as well as at the other facility at 1907 Nyhus Street. Shrimp and crab shells are brought here, dried and bagged. Crab, shrimp, and finfish bycatch are unloaded from fishing boats at this location.

Employment in the fishmeal plant is one or two people working five days a week year around. Few chemicals other than janitorial chemicals are stored here. Water use is cleanup water for the plant. The limits are arbitrary since there are no categorical limits that apply here. Other than best management practices, the only treatment for this wastewater is discharge over a 40-mesh tangential screen that has been in place since the term of the first permit.

Treatment for the proposed crab processing will have to be processed as shown in S6, Schedule of Compliance.

This is a permit renewal.

DISCHARGE OUTFALL

Washington Crab Producers has an outfall at the end of the dock where shrimp and crab are unloaded. This outfall discharges to the Westport Boat Basin at the surface. This outfall will have to be extended to deeper water if crabs are processed here.

PERMIT STATUS

The previous permit for this facility was issued on June 13, 2000. The previous permit placed effluent limitations on flow, pH, biochemical oxygen demand, total suspended solids, and oil and grease.

An application for permit renewal was submitted to the Department on, and accepted by the Department on January 26, 2005.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection on January 13, 2003.

During the history of the previous permit, the Permittee has not remained in compliance based on Discharge Monitoring Reports (DMRs) submitted to the Department. Several DMRs have been submitted late and two violations of the TSS limits have taken place. These violations were only technical violations since the limits expressed in the permit were purely arbitrary.

PROPOSED PERMIT LIMITATIONS

Federal and state regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology and water quality-basis. The limits necessary to meet the rules and regulations of the state of Washington were determined and included in this permit. The Department does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

The previous permit established limits by copying the previous limits for the combined fish filleting and fishmeal plant originally permitted at this site. The filleting operation shut down before June 2000, and the fishmeal operation continued. Under the previous permit, the limits were proposed to be recomputed after one year, but this was not done.

The fishmeal limits in this permit are determined by the actual performance of the plant using the data submitted in the DMRs less those occasions where there was a reported quantity remarkably larger than the rest (August 2001 and March 2002). These slightly larger limits are those in the proposed permit.

The derivation of these limits is shown in Appendix C. The mass of limited substance shown on the DMRs was subjected to the statistical methods included in the Permit Writers Manual that resulted in an allowable mass of daily discharge. To derive a limit, this mass was divided by four to get a unit limit expressed in pounds of limited substance per thousand pounds of product. The fishmeal plant reports a uniform production of 4,000 pounds per day.

Limits for fecal coliforms are those accepted as AKART for municipal discharges.

Limits for crab processing are taken from 40 CFR 408 Subpart H, Dungeness and Tanner Crab processing in the Contiguous States Subcategory.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the state of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the state of Washington.

ANTIDEGRADATION

The state of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to the Westport Boat Basin, which is designated as a Class A receiving water in the vicinity of the outfall. Characteristic uses include the following:

water supply (domestic, industrial, agricultural); stock watering; fish migration; fish and shellfish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation. Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Fecal Coliforms	14 colonies/100 mL maximum geometric mean
Dissolved Oxygen	8 mg/L minimum
Temperature	16 degrees Celsius maximum or incremental increases above background
pH	7.0 to 8.5 Standard Units
Turbidity	less than 5 NTU above background
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

Human Health

Washington’s water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the applicant's discharge is unlikely to contain chemicals regulated for human health.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined through a review of the discharge characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED JUNE 18, 2000

Parameter	**Average Monthly**		**Daily Maximum**	
	Existing Permit	**Proposed Permit**	**Existing Permit**	**Proposed Permit**
pH	Daily minimum is equal to or greater than 6.0 and the daily maximum is less than or equal to 9.0.			
Temperature, ºC	N/A	N/A	16	16
Fishmeal, Total Suspended Solids, lbs/1000 lbs Production.	2.0	2.9	3.6	8.5
Fishmeal, Oil and Grease, lbs/1000 lbs production	0.55	0.67	1.0	1.8
Crab Processing, Biochemical Oxygen Demand, lbs/1000 lbs Production	No Limit	4.0	No Limit	10.0
Crab Processing, Total Suspended Solids, lbs/1000 lbs Production	No Limit	0.69	No Limit	1.7
Crab Processing, Oil and Grease, lbs/1000 lbs production	No Limit	0.10	No Limit	0.25

Fecal Coliforms, colonies/100 ml	No Limit	200	No Limit	400

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. Monitoring frequency has been reduced in accordance with the policy outlined in the Permit Writers Manual from monthly to twice a year.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories.*

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 273-220-210).

SOLID WASTE PLAN

The Department has determined that the Permittee does not have a potential to cause pollution of the waters of the state from leachate of solid waste.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual industrial NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. The Department proposes that this proposed permit be issued for five years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(EE2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations, which are described in the rest of this fact sheet.

Public notice of application was published on March 21, 2004, and March 28, 2004, in the *Aberdeen Daily World* to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on _____, in the *Aberdeen Daily World* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Industrial Unit Permit Coordinator
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the 30-day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least 30 days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within 30 days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6293 or by writing to the address listed above.

This permit and fact sheet were written by Gary Anderson P.E.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

AKART-- An acronym for "all known, available, and reasonable methods of treatment".

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Responsible Corporate Officer-- A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C- TECHNICAL CALCULATIONS

Shellfish Meal Oil and Grease Limits

OIL & GREASE	POUNDS	1.33	1-Aug-00	0.285179
OIL & GREASE	POUNDS	1.25	1-Sep-00	0.223144
OIL & GREASE	POUNDS	1.2	1-Oct-00	0.182322
OIL & GREASE	POUNDS	2.32	1-Nov-00	0.841567
OIL & GREASE	POUNDS	0.41	1-Dec-00	-0.8916
OIL & GREASE	POUNDS	0.06	1-Jan-01	-2.81341
OIL & GREASE	POUNDS	0.41	1-Mar-01	-0.8916
OIL & GREASE	POUNDS	6.83	1-May-01	1.921325
OIL & GREASE	POUNDS	1.7	1-Jun-01	0.530628
OIL & GREASE	POUNDS	2.25	1-Aug-01	0.81093
OIL & GREASE	POUNDS	2.16	1-Sep-01	0.770108
OIL & GREASE	POUNDS	0.66	1-Oct-01	-0.41552
OIL & GREASE	POUNDS	0.29	1-Nov-01	-1.23787
OIL & GREASE	POUNDS	0.33	1-Dec-01	-1.10866
OIL & GREASE	POUNDS	1	1-Jan-02	0
OIL & GREASE	POUNDS	0.33	1-Feb-02	-1.10866
OIL & GREASE	POUNDS	0.7	1-Mar-02	-0.35667
OIL & GREASE	POUNDS	0.66	1-Apr-02	-0.41552
OIL & GREASE	POUNDS	0.5	1-May-02	-0.69315
OIL & GREASE	POUNDS	0.66	1-Jun-02	-0.41552
OIL & GREASE	POUNDS	0.75	1-Jul-02	-0.28768
OIL & GREASE	POUNDS	0.26	1-Aug-02	-1.34707
OIL & GREASE	POUNDS	0.79	1-Sep-02	3.135494
OIL & GREASE	POUNDS	0.7	1-Oct-02	-0.35667
OIL & GREASE	POUNDS	0.66	1-Jan-03	-0.41552
OIL & GREASE	POUNDS	0.58	1-Feb-03	-0.54473
OIL & GREASE	POUNDS	0.66	1-Mar-03	-0.41552
OIL & GREASE	POUNDS	0.5	1-Apr-03	-0.69315
OIL & GREASE	POUNDS	0.45	1-May-03	-0.79851
OIL & GREASE	POUNDS	0.65	1-Jun-03	-0.43078
OIL & GREASE	POUNDS	0.54	1-Jul-03	-0.61619
OIL & GREASE	POUNDS	0.62	1-Aug-03	-0.47804
OIL & GREASE	POUNDS	0.55	1-Sep-03	-0.59784
OIL & GREASE	POUNDS	0.5	1-Nov-03	-0.69315
OIL & GREASE	POUNDS	0.37	1-Dec-03	-0.99425
OIL & GREASE	POUNDS	0.33	1-Jan-04	-1.10866
Average		0.943333		-0.31737
Deviation				0.993652

APPENDIX C- TECHNICAL CALCULATIONS

Shellfish Meal Oil and Grease Limits

PERFORMANCE-BASED EFFLUENT LIMITS

USE EXCEL TO PERFORM THE LOGNORMAL TRANSFORMATION
AND CALCULATE THE TRANSFORMED MEAN AND VARIANCE

LOGNORMAL TRANSFORMED MEAN =	-0.3174
'LOGNORMAL TRANSFORMED VARIANCE =	0.9937
NUMBER OF SAMPLES/MONTH FOR COMPLIANCE MONITORING =	4
AUTOCORRELATION FACTOR(ne)(USE 0 IF UNKNOWN) =	0
E(X) =	1.1966
V(X) =	2.436
VARn	0.3544
MEAN n=	0.0023
VAR(X n)=	0.609

MAXIMUM DAILY EFFLUENT LIMIT =	7.398
AVERAGE MONTHLY EFFLUENT LIMIT =	2.669

2.668534 2.480216

APPENDIX C- TECHNICAL CALCULATIONS

Shellfish Meal Oil and Grease Limits

SOLIDS, TOTAL SUSPENDED	POUNDS	10.6	1-Aug-00	2.360854
SOLIDS, TOTAL SUSPENDED	POUNDS	2.88	1-Sep-00	1.05779
SOLIDS, TOTAL SUSPENDED	POUNDS	8.2	1-Oct-00	2.104134
SOLIDS, TOTAL SUSPENDED	POUNDS	0.51	1-Nov-00	-0.67334
SOLIDS, TOTAL SUSPENDED	POUNDS	0.66	1-Dec-00	-0.41552
SOLIDS, TOTAL SUSPENDED	POUNDS	0.3	1-Jan-01	-1.20397
SOLIDS, TOTAL SUSPENDED	POUNDS	1.3	1-Mar-01	0.262364
SOLIDS, TOTAL SUSPENDED	POUNDS	4.4	1-May-01	1.481605
SOLIDS, TOTAL SUSPENDED	POUNDS	0.68	1-Jun-01	-0.38566
SOLIDS, TOTAL SUSPENDED	POUNDS	2.38	1-Sep-01	0.8671
SOLIDS, TOTAL SUSPENDED	POUNDS	5.3	1-Oct-01	1.667707
SOLIDS, TOTAL SUSPENDED	POUNDS	1.86	1-Nov-01	0.620576
SOLIDS, TOTAL SUSPENDED	POUNDS	4	1-Dec-01	1.386294
SOLIDS, TOTAL SUSPENDED	POUNDS	6.5	1-Jan-02	1.871802
SOLIDS, TOTAL SUSPENDED	POUNDS	1.86	1-Feb-02	0.620576
SOLIDS, TOTAL SUSPENDED	POUNDS	9	1-Apr-02	2.197225
SOLIDS, TOTAL SUSPENDED	POUNDS	3	1-May-02	1.098612
SOLIDS, TOTAL SUSPENDED	POUNDS	2.8	1-Jun-02	1.029619
SOLIDS, TOTAL SUSPENDED	POUNDS	2.1	1-Jul-02	0.741937
SOLIDS, TOTAL SUSPENDED	POUNDS	0.35	1-Aug-02	-1.04982
SOLIDS, TOTAL SUSPENDED	POUNDS	0.79	1-Sep-02	-0.23572
SOLIDS, TOTAL SUSPENDED	POUNDS	0.85	1-Oct-02	-0.16252
SOLIDS, TOTAL SUSPENDED	POUNDS	0.75	1-Dec-02	-0.28768
SOLIDS, TOTAL SUSPENDED	POUNDS	0.93	1-Jan-03	-0.07257
SOLIDS, TOTAL SUSPENDED	POUNDS	3.9	1-Feb-03	1.360977
SOLIDS, TOTAL SUSPENDED	POUNDS	3.8	1-Mar-03	1.335001
SOLIDS, TOTAL SUSPENDED	POUNDS	1.6	1-Apr-03	0.470004
SOLIDS, TOTAL SUSPENDED	POUNDS	2.11	1-May-03	0.746688
SOLIDS, TOTAL SUSPENDED	POUNDS	4.44	1-Jun-03	1.490654
SOLIDS, TOTAL SUSPENDED	POUNDS	3.25	1-Jul-03	1.178655
SOLIDS, TOTAL SUSPENDED	POUNDS	3	1-Aug-03	1.098612
SOLIDS, TOTAL SUSPENDED	POUNDS	2.66	1-Sep-03	0.978326
SOLIDS, TOTAL SUSPENDED	POUNDS	0.21	1-Oct-03	-1.56065
SOLIDS, TOTAL SUSPENDED	POUNDS	1.8	1-Nov-03	3.583519
SOLIDS, TOTAL SUSPENDED	POUNDS	0.82	1-Dec-03	3.610918
SOLIDS, TOTAL SUSPENDED	POUNDS	4.1	1-Jan-04	3.637586
Average		2.880278		0.911436
Variance				1.265871

APPENDIX C- TECHNICAL CALCULATIONS

Shellfish Meal TSS limits

PERFORMANCE-BASED EFFLUENT LIMITS

USE EXCEL TO PERFORM THE LOGNORMAL TRANSFORMATION
AND CALCULATE THE TRANSFORMED MEAN AND VARIANCE

LOGNORMAL TRANSFORMED MEAN =	0.9114
'LOGNORMAL TRANSFORMED VARIANCE =	1.2659
NUMBER OF SAMPLES/MONTH FOR COMPLIANCE MONITORING =	4
AUTOCORRELATION FACTOR(ne)(USE 0 IF UNKNOWN) =	0
E(X) =	4.6849
V(X) =	55.887
VARn	0.4926
MEANn=	1.2980
VAR(Xn)=	13.972

MAXIMUM DAILY EFFLUENT LIMIT =	34.071
AVERAGE MONTHLY EFFLUENT LIMIT =	11.619

11.61855 10.83375

APPENDIX D--RESPONSE TO COMMENTS